

TALOS

**Spread Spectrum Communications Tactical
Countermeasures Systems**

AMS Defence Integrated Systems

TALOS COMMUNICATIONS DENIAL SYSTEMS

TALOS is the AMS patented Direct Sequence and Frequency Hopping Communications Denial System for tactical countermeasures operations. It operates in a way similar to an ultrafast follow jammer, yet **it covers the entire frequency range simultaneously at a single “lookthrough” time frame** of only 50us. This time can be reduced down to even 1us if very fast frequency hopping networks operate in the field. The upper limit of hops/sec TALOS can handle is determined by the physical limit of light velocity in air and is a function of the distances and geometry between the jammer and radio targets. The patented technology of TALOS reaches the highest possible upper limit of hops/sec for a given geometry while jamming simultaneously all targets, making it a unique ECM communications system.

TALOS can also operate as a classical jammer in two ways: 1. Using its main core for jamming any CW signals along with FH signals. 2. Jamming through a list of given frequencies and protecting from jam a list of frequencies. This mode of operation is provided from a separate module.

TALOS systems are appropriate for several tactical scenarios in military, navy or air force environments. They have been tested for years in the field and they have proved their value being the only up to day available effective FH and DS ECM system.

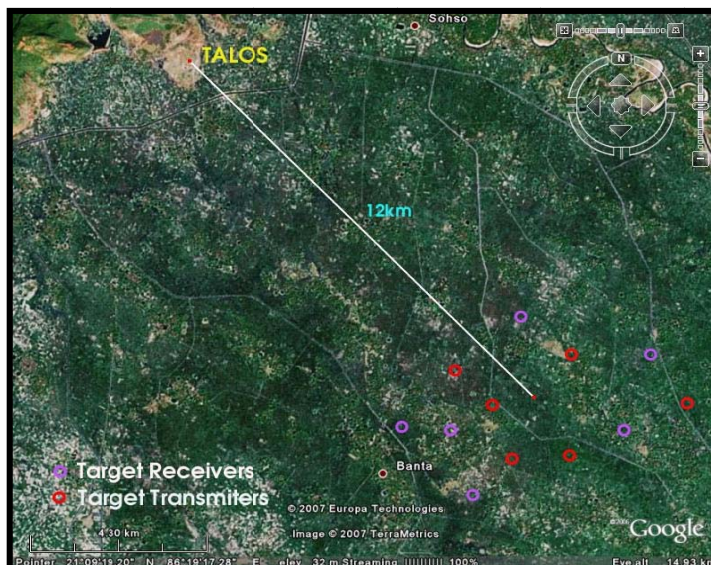
Typical specifications of the TALOS are summarized in the following table.

Specification	Value	Comments
Frequency ranges	VHF to microwave bands	TALOS-I: 30-90 MHz (VHF Band). TALOS-II: 110-136, 225-500 MHz (UHF Bands). TALOS-C1 module: Civil radio bands (Radio, TV). TALOS-C2 module: GSM & UMTS bands. Upgrade to other frequency bands is available upon request.
Power output	100W to 2KW	Other power level options are available upon request.
Antennas	Omni directional, sectoral and highly directive beam	The antennas used are dependent on the jamming scenario. For VHF and higher bands Log-Periodic antennas are used for directive reception and transmission. For GSM/UMTS jamming highly directive antennas are used.
Minimum antenna Rx level	-85 dBm	Minimum signal strength at TALOS receiver antenna for effective jam.
Foe target modes of operation	-	Frequency hopping (FH), Direct Sequence (DS), CW, Burst Transmission.
Foe target signal modulation	-	Analog AM, FM and all Digital Modulations (PSK, GMSK, OFDM etc.) are supported.
Jammer signal modulation	-	For analog targets any audio signal can be used for jammer Tx modulation. Any audio digital format is supported. For digital targets special modulation signals are produced for best jamming effectiveness.
Hopping rate jamming capability	Up to 20.000 hops/sec	This jammer is unique on its frequency hopping capabilities since it has both receiver and transmitter subsystems so it “sees” every signal in its frequency bandwidth and then retransmits a noisy copy in “almost zero” time delay.

		The hopping rate jamming capability can be tuned during its fabrication procedure.
Foe Networks	-	Up to 10 Frequency Hopping or Direct Sequence Networks can be jammed simultaneously. They can hop at any frequency within the jammer frequency band range.
Jamming Scenarios	-	Worst case scenario: (Land Forces) Ten (10) FH or DS networks operate simultaneously. Target transmitters and receivers are up to 12km distance from the jammer and distances between them are down to 2km. Foe transmitters' power 0.5W - 50W. Jammer power 500W. Omni-directional antenna for jammer Rx and Log-Periodic for jammer Tx.
Non-Jam Frequencies	-	2-6 frequencies can be set to be non-jammed. Emergency air force frequencies also protected.
System Software	-	Local or Remote system control. Main features: Man Machine Interface (MMI) for control of system modules (receiver, amplifiers, bands, non-jammed frequencies, spectrum display, waterfalls, disk storage). Antenna control. Digital maps w/GPS support. Other features possible upon request. The system can also operate with completely remote control.

Land Forces Interrupt Communications Scenario:

- Multiple (up to 10) independent foe frequency hopping networks operate in the field.
- TALOS operate from a distance up to 12km from foe networks.
- Distances between foe transmitters and receivers are down to 2km.
- TALOS will simultaneously interrupt all foe communications.



Land Forces Interrupt Communications Scenario:

- Foe battleships have landed forces on the island beach. They communicate with the ships with frequency hopping networks transmitting 5-50W.
- TALOS operate from a distance up to 6km from foe networks.
- Distances between foe transmitters and ships are down to 2km.
- TALOS will simultaneously interrupt all foe communications.

The system can optionally act as Electronic Surveillance Measure (ESM) communications station since it has its own receiver and it can monitor the frequency spectrum simultaneously as the jammer is operational based on an ultra fast time division multiplexing technique. This unique feature gives the capability to the operator to fine-tune the TALOS system according to the frequency spectrum environment at any time.

The system is fully computer controllable and through either wireless or wired link can be controlled remotely. VSAT satellite remote control is also available upon request.

Depending on the customer needs the system can be housed in small metallic box for low range applications or in a shelter (such as S280) for long range applications. Other options are available upon customer request for example placed on an aircraft or on a warship.

The antennas can be deployed automatically and the whole system is operational in less than 15 minutes.



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